

Claims 1-3 and 11 are rejected under 35 U.S.C. § 103 for obviousness based upon Babcock et al., U.S. P.G. Publication No. US 2002/0033519 A1 (hereinafter Babcock)

In the second enumerated paragraph of the Office Action, the Examiner asserted that one having ordinary skill in the art would have been motivated to modify the semiconductor device disclosed by Babcock to arrive at the claimed invention. This rejection is respectfully traversed.

Initially, Applicants note that the Examiner relied on In re Harza, for the proposition that "mere duplication of that mere duplication of the essential working parts has no patentable significance unless a new and unexpected result is produced," and Applicants assume that the Examiner found this particular case after reading M.P.E.P. § 2144.04. In this regard, the Examiner is referred to the first paragraph of M.P.E.P. § 2144.04, which is reproduced below:

As discussed in MPEP § 2144, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection. (emphasis added)

In re Harza involved a claim directed to a plurality of ribs. The prior art disclosed a single rib, and the court stated that the merely duplication of parts has no patentable significance. The Examiner, however, has failed to establish that the factual situation of the present application under examination is sufficiently similar to the factual situation found in In re Harza.

In addition, claim 1 recites that "said active regions partition said insulating film between adjacent resistor elements." Notwithstanding whether or not multiple active region/resistor element combinations could have been inferred from Babcock, the Examiner has failed to establish that one of such active regions would necessarily partition an insulating film between

adjacent resistor elements that are each formed on the insulating film, as recited in claim 1. In this regard, Applicants note that claim 1 does more than recite a plurality of a particular element. Instead, claim 1 is directed to an interaction between another element and the plurality of the particular element.

Applicants also note that the Examiner has failed to properly construe the term "active region." Feature 80, which the Examiner asserts to be an active region, is described by Babcock as a transistor gate structure (paragraph [0018]). As is well known in the art of semiconductor devices, a transistor gate and an active region are two very different features. Applicants, therefore, respectfully submit that the imposed rejection of claims 1, 3 and 11 under 35 U.S.C. § 103 for obviousness based upon Babcock is not factually or legally viable and, hence, solicit withdrawal thereof.

As to claim 2 and with regard to the Examiner's statement on page three of the Office Action that "the limitation that the insulating film is formed by shallow trench isolation carries no patentable weight," the Examiner's analysis appears to be based on the mistaken belief that "product-by-process" limitations can be completely ignored in product claims. In this regard, the Examiner is referred to M.P.E.P. § 2113. As is clear from the cases cited therein, it is clear that the Examiner has misapplied the law with regard to product-by-process limitations, as the law provides that product-by-process limitation must be considered by the Examiner in making a determination of novelty or obviousness. Although the Examiner has a reduced burden of proof with regard to product-by-process claims, as discussed in M.P.E.P. § 2113, the Examiner must first provide a rationale tending to show that the claimed product appears to be the same or similar to that of the

prior art.¹ However, even if the Examiner makes this reasoned argument, Applicants have an opportunity to provide evidence that establishes a difference between the product of the prior art and the claimed product.

The Examiner has failed to make any reasoned argument as to why the claimed insulating film formed by shallow trench isolation is identical to the isolation structure 20 of Babcock. The Examiner has merely asserted that the insulating film and the isolation structure are the same without providing any rationale to support this assertion. Thus, even though the Examiner may have a reduced burden of proof with regard to product by process limitations, the Examiner has failed to meet this burden of proof. Therefore, the Examiner has failed to meet the requirements established by the case law and M.P.E.P. § 2113 regarding product-by-process limitations. Furthermore, notwithstanding the Examiner's failure to meet these requirements, the Examiner's assertion that the claimed insulating film and the isolation structure of Babcock are identical is factually in error.

As is well known in the art, there are many methods of forming isolation, of which shallow trench isolation and local oxidation of silicon (LOCOS) are but two examples, and these two types of processes produce different structures. Furthermore, many different variations of shallow trench isolation and LOCOS processes exist, and most of these variations are intended to produce a change in the structure of the isolation feature. Therefore, the process used to form an isolating film can be a critical factor in determining the structure of that particular isolation film. Thus, Applicants

¹ "Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product." M.P.E.P. § 2113 (citing In re Marosi, 218 USPQ 289 (Fed. Cir. 1983)).

respectfully submit that the imposed rejection of claim 2 under 35 U.S.C. § 103 for obviousness based upon Babcock is not factually or legally viable and, hence, solicit withdrawal thereof.

Claim 4 is rejected under 35 U.S.C. § 103 for obviousness predicated upon Babcock in view of Van Zant

In the third enumerated paragraph of the Office Action, the Examiner relied on pages 30-31 in Van Zant for the proposition that a resistor's resistance varies inversely with the width of the resistor. In this regard, Applicants are unsure as to what relevance this teaching has to the limitations recited in claim 4, reproduced in part below:

said insulating film under said resistor elements is set to a predetermined width by said active regions, wherein said predetermined width is defined by an amount of shift in resistance value of said resistor elements, said amount of shift being defined by said predetermined width. (emphasis added)

The "predetermined width" being specified is the width of the insulating film, which is under the resistor elements. Specifically, the predetermined width is defined by an amount of shift in resistance value of the resistor elements. This is a completely different concept than the principle in Van Zant that a resistor's resistance varies inversely with the width of the resistor, as Van Zant is completely silent as to the width of an insulating film under resistor elements.

Applicants, therefore, submit that even if one having ordinary skill in the art were motivated to combine Babcock and Van Zant, the claimed invention would not result. Applicants, therefore, respectfully solicit withdrawal of the imposed rejection of claim 4 under 35 U.S.C. § 103 for obviousness based upon Babcock in view of Van Zant.

Claims 1-3, 11 and 13 are rejected under 35 U.S.C. § 103 for obviousness based upon Shirai et al., U.S. Patent No. 4,326,213 (hereinafter Shirai)

In the fourth enumerated paragraph of the Office Action, the Examiner asserted that one having ordinary skill in the art would have been motivated to modify Shirai to arrive at the claimed invention. This rejection is respectfully traversed.

The Examiner has again misapplied the law recited in In re Harza and In re Thorpe. Notwithstanding whether or not multiple active region/resistor element combinations could have been inferred from Shirai, the Examiner has failed to establish that one of such active regions would necessarily partition an insulating film between adjacent resistor elements that are each formed on the insulating film, as recited in claim 1. In addition, feature 20 is described as a "field oxidation film" (column 6, line 42), which is a term typically used to describe an isolation feature formed by LOCOS. Therefore, the Examiner's arguments as to the "obviousness of duplication of parts" and "no patentable significance to produce-by-process limitations" are misplaced.

Applicants also note that the Examiner has again misinterpreted the term "active region" by asserting "Q3" within Shirai discloses the claimed active region. Instead, Q₃ is described within Shirai as a transistor (column 5, line 5). As is well known in the art of semiconductor devices, the term "active region" is used generically instead of terms such as source/drain regions or source region and drain region. However, even though Shirai does disclose active regions (see features 36, 38), these features do not partition an insulating film between adjacent resistor elements that are each formed on the insulating film, as recited in claim 1. Applicants, therefore,

respectfully submit that the imposed rejection of claims 1-3, 11 and 13 under 35 U.S.C. § 103 for obviousness based upon Shirai is not factually or legally viable and, hence, solicit withdrawal thereof.

Claim 4 is rejected under 35 U.S.C. § 103 for obviousness predicated upon Shirai in view of Van Zant

In the fifth enumerated paragraph of the Office Action, the Examiner relied on pages 30-31 in Van Zant for the proposition that a resistor's resistance varies inversely with the width of the resistor. In this regard, Applicants incorporate herein the arguments previously presented with regard to the Examiner rejection of claim 4 for obviousness based upon Babcock and Van Zant. Specifically, the teaching in Van Zant that a resistor's resistance varies inversely with the width of the resistor is completely different than the limitation recited in claim 4, which is that a predetermined width of an insulating film under resistor elements is defined by an amount of shift in resistance value of the resistor elements. Applicants, therefore, solicit withdrawal of the imposed rejection of claim 4 under 35 U.S.C. § 103 for obviousness based upon Shirai in view of Van Zant.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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